Newsletter of the National Biological Information Infrastructure

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NBII Developing Avian Influenza Detection System

Increasing concern over the possibility of migratory birds introducing a highly pathogenic strain of avian influenza (Asian H5N1) into the United States has prompted the National Biological Information Infrastructure (NBII) <www.nbii.gov> to act, along with many other federal and state partners.

Coordination for these NBII efforts is centered at the NBII Wildlife Disease Information Node (WDIN) housed at the USGS National Wildlife Health Center in Madison, WI. The new Web-based system WDIN is developing (the National Highly Pathogenic Avian Influenza Early Detection Data System <wildlifedisease.nbii.gov/ai/>) is part of a collaborative Wildlife Health Monitoring Network, and is aimed at documenting multi-agency surveillance activities. With the incorporation of bird population and movement data, the system may assist in projecting the spread of avian flu. All of the system's data fields and elements are being constructed through consultation with WDIN partners and matched to existing vocabularies linked to established standards, consistent with those of the National Animal Health Laboratory Network (NAHLN). As of December 23, 2005, these standards and terminologies (Systemized Nomenclature of Medicine [SNOMED], Health Level Seven [HL7] and Logical Observation Identifiers, Names, and Codes [LOINC]) are Federal Policy (Federal Register, Volume 70, Number 246).

Injecting eggs with avian influenza virus at the USGS National Wildlife Health Center.

WDIN principals are helping raise visibility for this new NBII

(continued on page 2)

NIN Expands Collaboration with Invasive Plant Atlas of New England

The NBII Northeast Information Node (NIN) is building on an existing cooperative agreement with the University of Connecticut to expand collaboration with the Invasive Plant Atlas of New England (IPANE). The IPANE project <http://ipane.org> was created to establish an Early Detection Network, which will assess the current status of invasive plants throughout the states of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. An additional objective is to create a trained network of volunteers and an informed public that can detect new incursions of potentially invasive species.

Since the IPANE project started in 2001, program staff have trained over 600 volunteers to explore the New England landscape looking for existing occurrences of known invasive plants or new incursions of species likely to cause environmental

(continued on page 4)

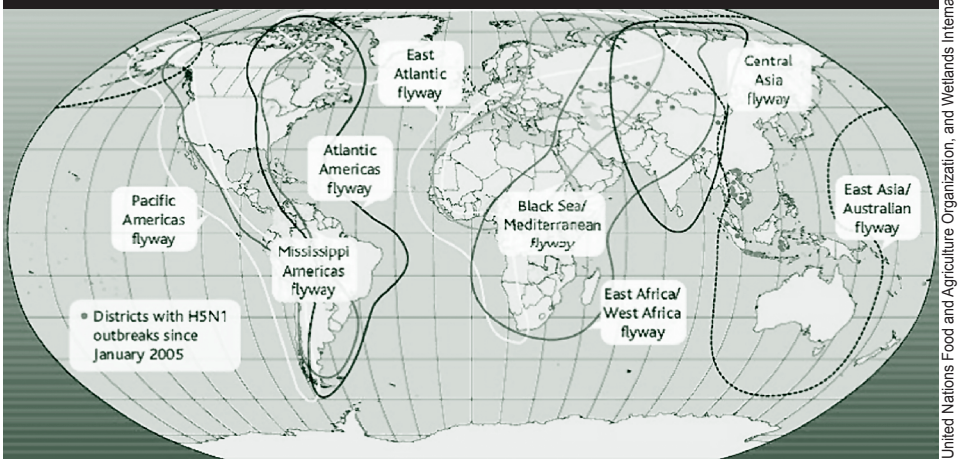
In This Issue

Avian Influenza (continued from page 1)

effort. For instance, Dr. Joshua Dein, WDIN Principal Investigator, recently participated in a workshop focusing on "Early Detection of Highly Pathogenic Avian Influenza (HPAI) in Alaska." Representatives from the Department of the Interior (U.S. Geological Survey, U.S. Fish and Wildlife Service, National Park Service) met with those from the Alaska Department of Fish and Game, other Alaska state agencies, the University of Alaska, and the U.S. Department of Agriculture (APHIS Wildlife Services and Veterinary Services) to review and discuss implementation of a national strategy for the early detection of HPAI.

Dr. Dein's presentation highlighted data and information management features of the new WDIN early detection system, which provides a common platform and set of data standards so that the results from these agencies can be shared easily, and information made available to managers, policy makers, and the public. While surveillance efforts are beginning in Alaska and the Pacific, these procedures are projected to be useful in the lower 48 states as well.

H5N1 Outbreaks in 2005 and Major Flyways of Migratory Birds



United Nations Food and Agriculture Organization, and Wetlands International.

Reflecting on the new system, Dr. Robert Worrest, WDIN Node Manager, said: "The staff at the USGS National Wildlife Health Center is to be commended for this effort. The new system takes advantage of the principles implemented by the NBII by developing a collaborative and synergistic partnership with several federal, state, and non-governmental organizations to provide an early warning to the agriculture, public health, and wildlife communities should migratory birds be found to carry the virus."

A number of countries are reporting cases of avian influenza in their domestic and wild bird populations. The H5N1 strain causes severe disease in domesticated fowl. H5N1 virus does not usually infect people, but infections with these viruses have occurred in humans in Asia and Eastern Europe. Most of these cases have resulted from people having direct or close contact with H5N1-infected poultry or H5N1-contaminated surfaces. So far, the spread of H5N1 virus from person to person has been limited and has not continued beyond one person.

The NBII is a broad, collaborative program to provide increased access to data and information on the nation's biological resources. The NBII links diverse, high-quality biological databases, information products, and analytical tools maintained by NBII partners and other contributors in government agencies, academic institutions, non-government organizations, and private industry. NBII partners and collaborators also work on new standards, tools, and technologies that make it easier to find, integrate, and apply biological resources information. Resource managers, scientists, educators, and the general public use the NBII to answer a wide range of questions related to the management, use, or conservation of this nation's biological resources.

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Ron Sepic, Editor
Wendy Wicks, Associate Editor
Gene Morris, Production Specialist

Contributors:
Onkar Chandel
Gladys Cotter
Karen Cunningham
Josh Dein
Andrea Grosse
Megan Hines
Vivian Hutchison
Cris Marsh
Marcia McNiff
Annette Olson
Toral Patel-Weynand
Paul Slota
Bob Worrest

Just send your comments, article ideas, and requests to be added to our mailing list (as well as address corrections) to:
Ron Sepic, *Access* Editor
USGS Biological Resources Discipline
302 National Center
Reston, VA 20192
Phone: 703/648-4218
Fax: 703/648-4224
E-mail: ron_sepic@usgs.gov

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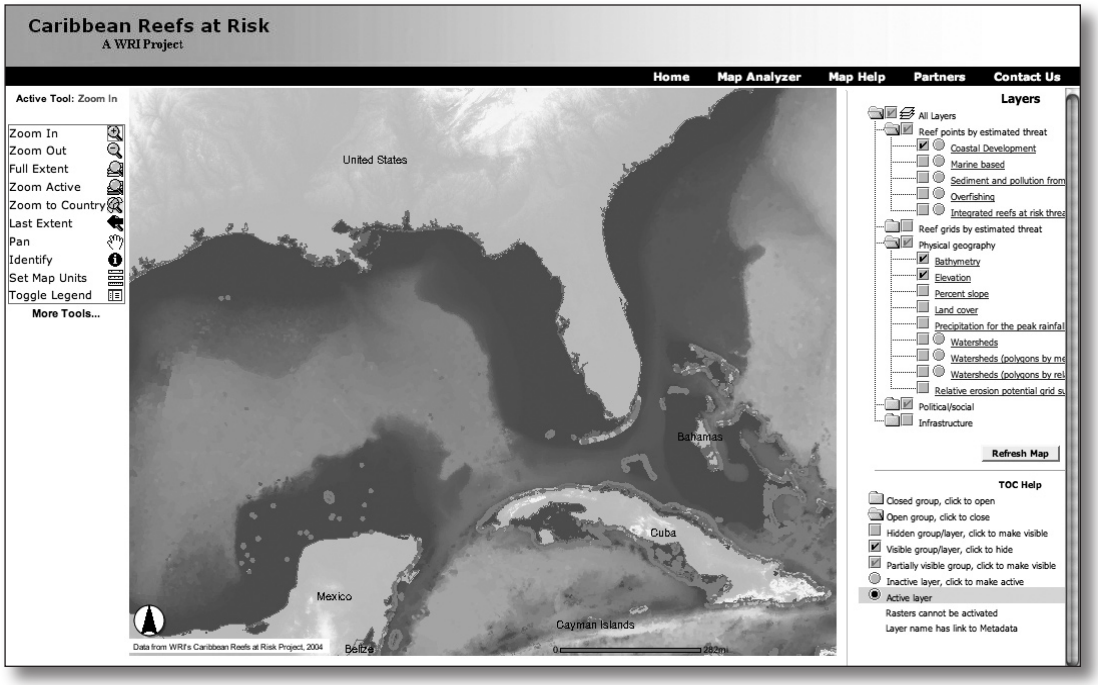
Please direct your general questions about the NBII, including partnership opportunities, to:
Program Manager
NBII National Program Office
302 National Center
Reston, VA 20192
Phone: 703/648-NBII (6244)
Fax: 703/648-4224
E-mail: nbii@nbii.gov

Visit the NBII Home Page at <http://www.nbii.gov>.

Caribbean Reefs at Risk Web Site Now Available

The NBII recently developed "Caribbean Reefs at Risk" <http://coralreefs.nbii.gov/reefsatrisk>, a new Web site focused on threats to Caribbean coral reefs. The site was created through a partnership of the World Resources Institute, the University of the West Indies Caribbean Coastal Data Center, International Coral Reef Action Network, and the United Nations Environment Programme–Caribbean Environment Programme. Wide-ranging information is consolidated within this site, which provides base data on the Caribbean basin, watersheds, land-based threats to coral reefs, coral reef locations (maps), pressures on coral reefs (observed threats, pollution, physical impacts, human activities, overfishing coastal development, and sediment from land-based and marine-based sources), changes in condition, and observations of coral bleaching and disease. The site provides mapping analysis and tools as well as data and metadata for downloading.



Upcoming NBII Metadata Events

NBII Introduction to Metadata Workshop

This 1½-day workshop provides an introduction to the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata and the NBII Biological Data Profile, as well as metadata development tools, strategies for production, and clearinghouses. The Biological Data Profile encompasses the entire geospatial metadata standard and includes additional elements to describe taxonomy, methods, and analytical tools (such as models). Demonstrations for producing documentation for a sample data set using Metavist software will be part of the main workshop; the half-day will allow participants time for hands-on experience with the software.

NBII Introduction to Metadata Workshop	
March 23-24	Knoxville, TN (University of Tennessee)
April 25-26 and April 27-28	Sacramento, CA *(workshops both full)*
Train the Trainer	
June 20-22	Denver, CO

Train the Trainer

This 3-day intensive interactive course covers basic training concepts and skills as a foundation to address challenging metadata subjects. The course enables the trainer to address metadata in a lively, invigorating, and memorable workshop. The course enables the agency to define metadata training goals, content, and approaches to implement metadata training programs specific to their data community. This course presents:

- What is training,
- How to quickly engage the audience in metadata,
- What are the NBII-FGDC's metadata learning goals and objectives, and
- Why goals and objectives are critical to agency-wide training implementation.

Learning styles, training and visual aids, along with presentation styles are presented as a means to connect with broad workshop audiences. The workshop includes applying audience analysis to develop the workshop content, duration, approach, determine facility requirements, and to assure a successful and meaningful workshop.

The FGDC metadata curriculum is introduced to the workshop participants as subject areas for presentation/exercise development areas. Participants apply their newly acquired trainer skills to develop a 20-minute metadata presentation, which includes an interactive exercise on a metadata concept, goal, or objective. The instructors and participants critique the presentation, the presenter, and the learning exercise.

NIN (continued from page 1)

problems in the future. Temporal and spatial data on the historic, current, and predicted distribution and status of invasive plants, potentially invasive plants, and noxious weeds are available on an interactive Web site as part of a multifaceted program developed to educate and engage the people of New England. Through knowledge gained from these activities, both rapid response to new invasions, and management and control of existing populations of invasive plants can be swift and effective.

One of the ways that IPANE plans to advance its Early Detection effort is to engage citizens with an interest in the problems facing an invaded landscape as volunteers in its Localized Early Detection Networks (LEDNs). These LEDNs focus on small regions within New England and consist of partnerships with local agencies or organizations that will run them and establish protocols for rapid response to new incursions. The two sites that have been chosen as pilot projects are the White Mountains National Forest (WMNF) in New Hampshire and Maine, and Mount Desert Island in Maine. IPANE will work with the partners in these pilot areas to develop outreach materials and training for educating and working with non-trained citizens. Work in each area will concentrate on 10-12 species of interest as early detection species that have met project-created criteria of being not currently present or only known from a few occurrences in the region; having a reasonably good chance of arrival because of biology or vector activity; and known to be invasive in similar habitats elsewhere. Additional partners include the U. S. Fish and Wildlife Service, U.S. Department of Agriculture (which has provided two major grants to help create and continue multiple aspects of the IPANE project), U.S. Forest Service WMNF, Appalachian Mountain Club, Acadia National Park, Friends of Acadia, and Garden Clubs of Mount Desert.

Les Mehrhoff (left), IPANE Director, explains invasive species identification techniques.

Also critical to the early detection of incursions of invasive species is knowing where to look and what to look for. Information about where a species is known to occur, as well as where it does not, in both its native and introduced ranges, together with information about the associated environmental variables can be used to predict how likely the species is to be present or absent in unsampled locations. IPANE is exploring and comparing the predictive power of different modeling approaches, as well as developing and applying novel Bayesian explanatory models, which hold considerable promise as predictive tools. To make this information useful, understandable, and available in a form that can be used by those looking for new incursions of invasive species, IPANE staff will produce a number of maps that provide information on how certain (or uncertain) they are of the predictions generated for any species at any location. IPANE will work with the Center for International Earth Science Information Network (CIESIN), the NIN lead partner, to develop a Web mapping shell interface, which will allow these predictive maps to be displayed online. In addition, explanatory text plus detailed images will be developed and uploaded, along with maps of current known and historical locations of invasive species, and links leading to additional information. There will be a feedback mechanism for users to evaluate and critique the information provided online.

NIN is coordinating these activities with the NBII Invasive Species Information Node to ensure the work will assist IPANE and advance its partnership with this thematic node in the years to come. For more information, visit the IPANE Web site or contact Les Mehrhoff at <les.mehrhoff@uconn.edu>.

International Connections

GITAN AT COP 8

The Global Integrated Trends Analysis Network (GITAN) will host an official side event at the Eighth Ordinary Meeting (COP8) of the Conference of the Parties to the Convention on Biological Diversity (CBD), to be held in Brazil in March of this year. The objective is to share information on GITAN activities and accomplishments to date. The event will include a panel presentation and discussion, followed by a question-and-answer session. The panel will include staff from the U.S. Geological Survey (USGS), Guyra Paraguay (a non-government organization [NGO]), and the Paraguayan Environment Ministry. Presentations will cover discussions on GITAN global activities, the new Rapid Land Cover Mapping tool and other informatics tools, and pilot projects in Senegal and Paraguay.

GITAN is a multidisciplinary network of collaborators committed to delivering comprehensive and integrated data on landscape change.

GITAN is a multidisciplinary network of collaborators committed to delivering comprehensive and integrated data on landscape change. GITAN provides an institutional and spatial framework for integrating and delivering data on the status and trends of land cover, ecosystems, and conservation threats. GITAN Web-based tools enable users to view trends analyses, satellite images, and derived data layers. For example, one tool enables conservation practitioners to edit – on the Web and in real time – geographical boundaries and associated data characterizing Important Bird Areas, and to view their data in the context of other GITAN data. The NBII and the USGS (Geography discipline) are providing programmatic and technical support and leadership for this exciting new initiative.

The GITAN Web-based tools can be accessed at <http://rockyitr.cr.usgs.gov/gitan>. A calendar and description of all COP8 side-events is accessible at <http://www.biodiv.org/register/side-events/list.aspx?mtg=COP-08>.

U.S. Federal Agencies Biodiversity Activities Inventory

The NBII, in partnership with the Biodiversity and Ecosystems Informatics Work Group (BioEco), are preparing to unveil an online inventory of U.S. Federal Agencies Biodiversity Conservation and Sustainable Development Activities. The inventory will consist of: (1) Biodiversity Conservation and Sustainable Use Programs within U.S. Federal Government Departments or Agencies, (2) U.S. Federal Government enabling laws and regulations, and (3) main international agreements related to biodiversity conservation and sustainable use of resources. The inventory will also illustrate which Articles of the CBD are relevant to each activity.

By cataloging and describing these programs and activities this new resource aims to:

- Promote information exchange and institutional cooperation among U.S. Federal Agencies,
- Produce a tool for improving environmental planning within the Federal Government, and
- Provide a reference guide on Federal Programs and activities on biodiversity conservation and sustainable use.

The BioEco <http://www.bioeco.gov/index.html> was chartered in 1997 by the Committee on Environment and Natural Resources, Subcommittee on Ecological Systems, to improve coordination of Federal Biodiversity and Ecosystem informatics activities and to provide a recognized, high-level focal point for those activities.

NBII at WHMSI Conference

The NBII attended the Second Meeting of the Western Hemisphere Migratory Species Initiative (WHMSI), which was held January 16-20 in San Jose, Costa Rica. The conference brought together government and NGO representatives with an interest in international dialogue and cooperation on migratory species. The objectives of the event were to establish a permanent forum for the conservation of migratory wildlife and explore regional and sub-regional collaboration.

WHMSI is an initiative that came together after a call from Western Hemisphere leaders at the Summit of the Americas meeting in Quebec in 2001 to "advance hemispheric conservation of plants, animals and ecosystems through…the development of a hemispheric strategy to support the conservation of migratory wildlife throughout the Americas." In October 2003, and to address this call, representatives from 25 nations and over 40 international wildlife conservation groups and stakeholder representatives held, in Chile, the First Western Hemisphere Migratory Species Conference.

Upcoming Events of NBII Interest

"Content Unleashed: Delivering the New Information Experience" NFAIS Conference, Philadelphia, PA.	February 26-28
Environmental Industry Summit 2006, San Diego, CA.	March 1-3
Windustry's Community Wind Energy 2006, Des Moines, IA.	March 7-8
Planning for the Future: Climate Change, Greenhouse Gas Inventories, and Clean Energy Linkages, San Francisco, CA.	March 7-9
Building Energy Conference and Trade Show, Boston, MA.	March 7-9
National Green Building Conference, Albuquerque, NM.	March 12-14
Association for Environmental Health and Sciences Meeting and West Coast Conference on Soil, Sediments, and Water, San Diego, CA.	March 13-16
2006 National Oceanic and Atmospheric Administration's Climate Prediction Applications Science Workshop: Research and Applications On Use and Impacts, Tucson, AZ.	March 21-24
Computers in Libraries, Washington, DC.	March 22-24
Electronic Resources & Libraries Conference 2006, Atlanta, GA.	March 23-25
First Fire Behavior and Fuels Conference, Portland, OR.	March 28-30
National Science Teachers Association 54th National Conference, Anaheim, CA.	April 6-9
17th Global Warming International Conference and Expo (GW17), Miami, FL.	April 20-21
Conserving Birds in Human-Dominated Landscapes: A Biodiversity Symposium, New York, NY.	April 27-28

NBII National Program Office
U.S. Geological Survey, 302 National Center
Reston, VA 20192